MEDICAL NEWS *in brief*

C. D. HOWE MEMORIAL FELLOWSHIPS

The C. D. Howe Memorial Foundation, established to perpetuate the memory of the late Clarence Decatur Howe (1886-1960), a leading architect of Canada's industrial development, has recently announced that applications are being received for the C. D. Howe Memorial Fellowship Awards for the forthcoming year.

The purposes of the Foundation in offering the awards are to honour and promote imaginative and skilled enquiry in recognized fields of learning and high quality of leadership among young Canadians at advanced stages of their education.

The awards are designed for the assistance and encouragement of those who have completed their formal education and whose unusual capacities of mind and character give promise of leadership and decisive achievement in their fields of learning and endeavour.

Not less than three awards will be made each year and each award will normally be tenable for one year.

Each successful candidate will receive $5000 and, where applicable, reasonable travel expenses. If a winner is married at the time of application, an additional allowance of $2000 will be paid, together with travel expenses of family, where applicable.

There will be no restriction upon the location at which the Fellowship may be carried out except that it must be suitable to the program of work to be undertaken.

The awards may be held by men or women who are Canadian citizens, or who are normally resident in Canada, and who hold a doctoral degree or have attained an equivalent level of achievement in scholarly or applied fields. Preference will be given to those candidates who are not more than 35 years of age at the time of application.

Candidates may either be nominated by an institution or may make direct application. An institution or organization wishing to nominate candidates should submit a letter of nomination to the address shown below. Application forms will be sent directly to the nominees. A candidate wishing to make direct application should request appropriate forms from the address shown below.

Application forms must be completed in quadruplicate and sent to the address shown below to arrive *not later than November 7, 1964.*

Preliminary screening of applications will be made by a committee appointed by the Canadian Universities Foundation.

Candidates selected by the Preliminary Screening Committee will be invited to appear before the Selection Committee, made up of academic personnel and members of the Board of Directors of the C. D. Howe Memorial Foundation, who will choose the winners.

Correspondence concerning requests for application forms or submission of applications should be addressed to: Director of Awards, Canadian Universities Foundation, 75 Albert St., Ottawa, Ontario.

(Continued on page 38)

MEDICAL NEWS *in brief*

(Continued from page 34)

DIABETES AND PREGNANCY

The effects of pregnancy on the diabetes of the mother and of diabetes on the pregnancy have been reviewed by Constam *et al.* (*Schweiz. Med. Wschr.*, 93: 1611 and 1647, 1963). They feel that many of the peculiarities of the course of pregnancy in diabetic women are due to the much faster ageing process in diabetics. One could therefore regard the pregnant diabetic as resembling in certain respects the elderly non-diabetic. The higher incidence of toxemia of pregnancy in diabetics and the increased incidence of intra-uterine fetal deaths is confirmed by the studies of Constam *et al.* Of 133 pregnancies, 107 went beyond the 28th week and of these 22 terminated with stillborn infants.

It is claimed that ketoacidosis in the early weeks of pregnancy predisposes to embryopathies owing to the development of lactoflavin deficiency. Nine of the 108 newborn in this series had congenital anomalies, of which three were fatal. There was a wide variety and no single pattern emerged. In the last weeks of pregnancy, after the 28th week, macrosomia develops. The hyperglycemia of the mother stimulates beta-cell activity in the fetus, and large quantities of circulating insulin accelerate glycogen synthesis as well as fat and protein formation in the fetus, thus favouring macrosomia. Other factors are probably of importance, such as hormonal stimulation from the increased corticoids of the mother which have a diabetogenic effect on the fetus. In obese diabetics an increase of pituitary growth hormone has been found by some workers (Ehrlich and Brandle) and this could also contribute to the development of macrosomia. Insulin antagonists passing from mother to child are also accused of influencing fetal adiposity. While they interfere with insulin activity in muscle tissue, they do not antagonize insulin effect on fat metabolism. In addition to giant growth, the newborn of a diabetic mother is fat, has a double chin and a short neck. There is excessive hair growth on the head down to the forehead and the temples. The appearance of these children has been described as cushinoid. At autopsy large livers, hypertrophied hearts and very large adrenal

(Continued on page 40)

MEDICAL NEWS *in brief*

(Continued from page 38)

glands are found at times. Immaturity of the fetus is another important and frequent finding. The dreaded tendency to pulmonary atelectasis with hyaline membrane formation is often observed. Another serious complication in the immediate postpartum period is hypoglycemia of the infant. Hyperirritability of peripheral nerves due to hypoglycemia can be observed in about one-third of the infants of diabetic mothers. Hyperbilirubinemia is observed in one-third of these children, particularly in those born prematurely. All of these disturbances, including myocardial damage, reach their climax within the first eight days and, as a rule, leave no permanent damage. In the absence of serious anomalies and after surmounting the immediate perinatal difficulties, the child of a diabetic mother develops as well as a mature child of a nondiabetic mother. The tendency to diabetes is, however, increased in later life.

The therapeutic regimen adopted by Constam and associates brought about a decrease in fetal mortality from 26 to 16% and that of the newborn from 13 to 4%. Under particularly close and good supervision of the pregnant mothers there is now an 83% chance that a pregnant diabetic can have a normal child that survives even when the diabetes has been present for many years. If the pregnancy has lasted more than 28 weeks the chances of survival are increased to 89%.

These good results are considered to be due to improved care of the diabetic mother and careful choice of the timing and method of delivery, use of safer anesthetics, appropriate treatment of the immature newborn, and the concerted teamwork of an internist, obstetrician, anesthetist and pediatrician. The therapeutic measures include: (1) earliest possible good control of the metabolic disturbance and prevention of acidosis; (2) elimination of possible infection, particularly of the urinary tract; (3) avoidance or prevention of toxemia of pregnancy, hydramnios and renal insufficiency in patients with pre-existing nephropathy; (4) choice of a good time and of the most appropriate method of delivery; (5) maintenance of normal postpartum course; and (6) protection of the newborn.

In the first months of pregnancy hypoglycemia has to be avoided as it may predispose to embryopathies. By the same token hyperglycemia has to be prevented in the second half of pregnancy because of the tendency of these patients to hydramnios. Oral hypoglycemic agents have been suspected of favouring a higher perinatal mortality and have been frowned upon by some writers, especially since animal experiments have shown that anomalies are produced with these agents. Insulin dosage has to be adjusted very frequently during the pre-delivery and post-delivery periods, preferably by the use of rapid-acting insulin and by frequent determinations of blood sugar. During the delivery period carbohydrate utilization is very high, so that the insulin dosage must be kept accordingly low. Following delivery insulin requirements frequently drop, possibly because of the removal of the placenta.

(Continued on page 43)

MEDICAL NEWS *in brief*

(Continued from page 40)

All diabetic mothers should be hospitalized for delivery. Latent diabetics can await normal term at home, and be admitted at term. Expectant mothers whose diabetes has lasted 20 years and has developed after the tenth year of age, and who do not have evidence of vascular changes or toxicity or a history of prematurity or fetal death, are hospitalized five weeks before term. If marked edema or hydramnios is present or there is a history of fetal death before the 32nd week after the last menstruation, the mothers are hospitalized even earlier. Ideally, delivery should take place in the 37th week or four weeks before the estimated term. Indications for section are (1) previous deadborn, (2) primipara over 28 years of age, (3) disproportion between child and pelvis or unfavourable position of fetus, (4) if particularly rapid delivery becomes necessary, and (5) if delivery has to take place five or more weeks before term. Premedication for anesthesia should entail avoidance of opiates and barbiturates. In the postnatal period the mother may be given analgesics freely and she is encouraged to get up on the day after delivery. Breast feeding is not contraindicated, but in most diabetic mothers this function is poor. In the newborn, particular attention should be paid to the respiratory tract which has to be carefully cleared and frequently aspirated. If the child is cyanotic he should receive oxygen and then be placed in an incubator and treated like a premature infant.

FUTURE ANNUAL MEETINGS, CANADIAN FEDERATION OF BIOLOGICAL SOCIETIES

The Eleventh Annual Meeting of the Canadian Federation of Biological Societies (Canadian Physiological Society, Pharmacological Society of Canada, Canadian Association of Anatomists, and Canadian Biochemical Society) will be held at Queen's University, Kingston, Ont., June 12-14, 1968.

The Federation's Twelfth Annual Meeting will be convened on June 11-13, 1969, at the University of Alberta, Edmonton.

SECOND INTERNATIONAL CONGRESS OF PSYCHOSOMATIC MEDICINE IN OBSTETRICS AND GYNECOLOGY

The Second International Congress of Psychosomatic Medicine in Obstetrics and Gynecology will be held in Vienna, Austria, July 28 to 31, 1965. The program will be devoted to papers dealing with the psychosomatic aspects of conception, pregnancy, labour, delivery and lactation. The First Congress, held in Paris in 1962, included communications from 22 nations in North and South America, West, Central and East Europe. A comparable opportunity for exchange of knowledge is anticipated at the 2nd Congress.

For further information, correspondence should be directed to Doz. Dr. A. H. Palmrich, Secretary General, Wiener Medizinische Akademie, Alserstr. 4, Vienna 9, Austria.